

Appl. No. 10/708,059
Amdt. dated October 19, 2005
Reply to Office action of July 20, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application :

Listing of Claims:

- 5 1. (currently amended) A method of building a wafer defect database, the wafer defect database comprising a defect classification recipe which is used for a defect classification machine to perform an automatic defect classification, the method of building the defect database comprising following steps:
- 10 (a) providing a first wafer with a plurality of defects thereon that were generated during a first semiconductor process;
- (b) performing a defect inspection to the first wafer to detect ~~detect~~ the defects;
- (c) providing a predetermined defect database which comprises a defect classification recipe corresponding to a second semiconductor process;
- 15 (d) utilizing the defect classification machine to perform ~~performing~~ an automatic defect classification according to the ~~defect classification recipe~~ predetermined defect database to separate the defects into a plurality of defect types;
- (e) performing a manual defect classification to verify the accuracy of the automatic defect classification to each defect type; ~~to separate the defects into a plurality of defect types;~~ and
- 20 ~~performing a verifying step to verify accuracy of the automatic defect classification for each defect type.~~
- (f) assigning the predetermined defect database as the wafer defect database when the accuracy of the automatic defect classification is qualified and setting up the predetermined database for online usage;
- 25 (g) performing an updating step to correct the predetermined defect database when the accuracy of a specific defect type of the automatic defect classification is not qualified, wherein the updating step comprises:
- providing a second wafer with a plurality of defects, wherein the second wafer

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was generated from the first semiconductor process;
performing a defect inspection to the second wafer; and
collecting defect classification recipe of the specific defect type to correct the
defect classification recipe within the predetermined defect database; and
5 (h) repeating steps (d), (e), (f), and (g) to complete the wafer defect database.

2. (cancelled)

10 3. (cancelled)

4. (original) The method of claim 1 wherein the second semiconductor process is a previous generation process compared to the first semiconductor process with the same design rule.

15 5. (original) The method of claim 1 wherein the first semiconductor process and the second semiconductor process have similar patterns or defect types.

6. (currently amended) A method of an automatic wafer defect classification comprising:
20 providing a wafer with a plurality of defects thereon that were generated during a first semiconductor process;
performing a defect inspection to detect the defects;
providing a defect database which comprises a defect classification recipe corresponding to a second semiconductor process; and
performing an automatic defect classification according to the defect recipe to separate
25 the defects into a plurality of defect types.

7. (currently amended) The method of claim 6 further comprising a verifying step to verify accuracy of the automatic defect classification for each defect type, the verifying step

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comprising:

performing a manual defect classification to the defect; and

utilizing the result from the manual defect classification to verify the accuracy of the
automatic defect classification.

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8. (cancelled)

9. (currently amended) The method of claim 7 further comprising a step of updating the
defect database if the accuracy of the automatic defect classification is not qualified, the step

10 comprising:

collecting defect information from another wafer respective to the classification type
with unqualified accuracy according to the result of the manual defect classification;

correcting the defect database according to the defect information; and
repeating the verifying step.

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10. (cancelled)

11. (original) The method of claim 6 wherein the second semiconductor process is a previous
generation process compared to the first semiconductor process with the same design rule.

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12. (original) The method of claim 6 wherein the first semiconductor process and the second
semiconductor process have similar patterns or defect types.

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